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AUTHOR Rosenberg, Daniel Z.
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ABSTRACT

The study reported in this paper examined how physical education teachers who have not received formal training learn to teach. The central research question addressed was: What teaching practices do nonformally trained physical education teachers exhibit, and from what sources do they gain the knowledge for such practices? In addressing this question, three hypotheses are considered, concerning physical education teachers who have not received formal training: (1) they equate performance skill with the ability to teach; (2) they may be competent performers of an activity, but possess low measures of pedagogical content knowledge in that area; and (3) they do not reflect on their teaching. Profiles are presented of two university students who were also instructors in the physical education department, one in volleyball, the other in fencing. The results of the study indicate that prior educational experiences did play a role in how the two instructors learned to teach. In a discussion of implications for teacher education programs, it is suggested that teacher training candidates experience a similar self-education process prior to their formal preservice training. Left unchecked, however, these views about teaching may remain dormant only to re-emerge after the preservice training period. (JD)

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LEARNING TO TEACH

An Examination of Non-Formally Trained Physical Education Teachers

A Comprehensive Examination Document

By

Daniel Z. Rosenberg

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Submitted to the Comprehensive Examination Committee, PETE Program at the University of Massachusetts in partial fulfillment of the requirements for the degree of

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Introduction

The process by which individuals learn to teach traditionally has been studied by examining teaching recruits at various stages of preservice and inservice training. An underlying assumption has been that prospective teachers enter formal teacher preparation programs as blank slates, with little or no knowledge about the skills required to be an effective teacher. This assumption has been questioned by those who recognize the strong influence of prior educational experience drawn from what Lortie (1975) calls the "apprenticeship of observation." A strong case can be made for the notion that prospective teachers' values and dispositions are significantly influenced by their own years of schooling.

Although their views may be one dimensional or distorted, individuals enter teacher training programs with knowledge based on strong views and beliefs about teaching often shaped from the vantage point of the spectator. Just as theater audiences are not privy to the backstage preparation of a play, but are merely exposed to the the final product, students rarely get to see what goes on behind the scenes in the daily work of teaching and thus as pupils receive only partial exposure to the education process.

In the wake of the recent reform movement (Holmes, 1986; Carnegie, 1986; JTTP, 1987) that calls for an increase in subject matter knowledge with a reduction in undergraduate pedagogy, teacher educators have been left to examine the

consequences of such decisions. What impact will the new reforms have on future teachers? What will these new teachers bring to the classroom and how will they behave? By studying teachers who have not received formal training, teacher educators not only can help predict the outcome of curriculum reform, but also can gain insight into the knowledge that prospective teachers bring with them when they enter teacher education programs.

Purpose

The purpose of this study was to examine how physical education teachers who have not received formal training learn to teach. The central research question addressed is: What teaching practices do non-formally trained physical education teachers exhibit, and from what sources do they gain the knowledge for such practices? In addition, the following three hypotheses developed from an earlier pilot study of the influences that affected the teaching behavior of an untrained physical education instructor (Rosenberg,1988) were tested:

1. Physical education teachers who have not received formal training equate performance skill with the ability to teach.
2. Physical education teachers who have not received formal training, may be competent performers of an activity, but possess low measures of pedagogical content knowledge in that area.
3. Physical education teachers who have not received formal

training do not reflect on their teaching.

An example of the first hypothesis would be a volleyball instructor who thinks that his or her ability to spike a ball is linked to the ability to teach the spike. It would thus follow that this individual would assume that the better one could spike a volleyball the better one could then teach the spike.

The second hypothesis draws on Shulman's (1986) model of the teacher knowledge associated with a specific subject matter. Possessing pedagogical content knowledge allows teachers to transform their knowledge of the subject matter into learning activities that are appropriate to the level of the learner. Advanced tennis players, for example, can execute flat serves with high degrees of proficiency. Based on this ability alone, however, they are not necessarily aware that one of the hardest aspects of a serve for a beginner is synchronizing the toss with the racquet swing. This knowledge about the learner and the skill is essential for teachers to recognize common learning problems associated with specific skills, and to develop the ability to design appropriate learning activities.

The third hypothesis takes its significance from the fact that given their lack of formal exposure concerning workable teaching models, reflection is the only way non-formally trained physical education teachers can detect teaching errors, devise improved strategies, and grow more expert in their capacity to provide instruction.

Method

The following forms of data were collected:

1. Background questionnaires.
2. Transcripts of formal audio-taped interviews.
3. Observational field notes.
4. Video-tapes of classes.
5. Transcripts from audio-taped planning sessions.

A personal history background questionnaire was piloted and then distributed to a group of ten volleyball and fencing student instructors in the General Physical Education program at the University of Massachusetts. Instructors teaching in the program are virtually all content specialists with no formal teacher education background. Their credentials for expertise generally derive from a relatively high level of participation in a competitive setting. Two participants were selected for this study, one volleyball instructor and one fencing instructor.

Two formal interviews were conducted with each instructor, one prior to the observation period and one after the final observation. During the first interview, questions dealt with each instructor's background and probed into experiences that might have influenced their teaching. Each instructor was formally observed teaching four classes at intervals during the semester. Descriptive field notes of teaching behaviors were gathered during each observation and later used as a source for questions during the second formal interview.

In addition, each instructor was videotaped twice while teaching and participated in follow-up stimulated recall sessions that facilitated discussion on the origins of specific teaching behaviors. Several informal interviews were also conducted prior to or immediately following observed classes.

To help ascertain to what degree each instructor possessed pedagogical content knowledge, separate sessions were arranged with each participant to talk through the planning process for teaching a specific skill to imaginary groups of beginning and advanced students. This helped to identify their ability to distinguish among the needs of students at various skill levels and to modify activities accordingly. All formal interviews, simulated planning exercises, and stimulated recall sessions were audiotaped. Relevant sections were transcribed and transcripts were given to each participant to read and check for accuracy.

Results

CLASS PROFILES

The following descriptions of each class are presented to help put into context the data relating to the research question and hypotheses.

Volleyball II: 27 undergraduate college students were enrolled in this one credit, coeducational, General Physical Education (G.P.E.) class. The class met twice a week for an hour and fifteen minutes. Three courts were available in a large gymnasium. The instructor was a twenty two year old senior male majoring in legal studies. He had previously taught one semester of volleyball II in the G.P.E. program. He had been a member of the U/Mass men's volleyball club for two years and in high school played varsity basketball, tennis, baseball, and soccer.

During the formal observation period, which covered the first four to six weeks of the semester, volleyball classes followed a consistent pattern:

1. Informal warm-up. Students arrived individually or in small groups and started hitting a ball and playing informally. The instructor took attendance by having students check in with him as they arrived or by recognizing them as they warmed up and checking their names off on an attendance sheet.

2. Lecture/Demonstration. After allowing approximately fifteen minutes of informal play the instructor would call the class together on one court and proceed to give a ten to

twenty minute lecture on a specific volleyball skill or strategy. During the lecture the instructor would generally demonstrate a specific skill at least once.

3. Practice. The instructor would divide the class into five or six groups, usually by having the students "count off". The students would then position themselves on the court and start a drill to practice the skill that had been introduced. The drills generally were characterized by long lines and much waiting time. The instructor would walk around the perimeter of each court and observe. Occasionally, and mostly at the request of a student, he would offer individual feedback or model the skill being practiced. Practice periods usually lasted for about twenty minutes.

4. Playing games. Inactive students often became restless, and some of them would ask to start a game. At this point the instructor would pull the class together by having students line up and count off again to form teams. The instructor would select the highest skilled players and join them in playing a game. Sometimes higher skilled "guests" would join the instructor and play on his team. The instructor generally did not interact with the lower skilled students during this time. Games would last for approximately forty minutes. There was no formal closure. Students left, as they arrived, individually or in small groups. Often, higher skilled students and the instructor would stay and continue to play or work on specific skills.

This pattern of: informal warm-up, lecture/demonstration, practice, and game play remained consistent during the entire observation period.

Fencing II: 20 undergraduate students were enrolled in this one credit, coeducational, General Physical Education class. There were 19 males and 1 female. The class met three times a week for fifty minutes. The available space was half of a large gymnasium. A Fencing I class was held concurrently in the other half of the gym. On nice days the class met outside on a grassy area adjacent to the gymnasium.

The instructor was a twenty year old junior female majoring in exercise science. She had previously taught Fencing I and Fencing II for three semesters. She had been a member of the U/Mass fencing club for three years. In high school she had competed for four years as a member of the fencing team. Her father also had been a competitive fencer. Related experience included teaching fencing privately, coaching at her high school, and work in summer camps.

During the observation period the fencing class also followed a consistent pattern.

1. Attendance. The instructor would formally start every class by taking attendance. She positioned herself in front of her class and read out names.

2. Group stretching and warm-up. The instructor would lead the class in teacher directed stretching and a short aerobic warm-up. The warm-up ordinarily included a fencing footwork exercise in which all the students participated.

This stretch and warm up period lasted approximately ten minutes.

3. Review/Lecture/Demonstration. The instructor would call the students together, asking them to form a semicircle around her. She would then give a five to ten minute lecture/demonstration that usually included a short review of what had been covered in the preceding class and an introduction to a new skill. She usually had someone assist in modeling a skill. She also would ask if there were any questions, answering those that arose in some detail.

4. Practice-work in pairs. The class would break up into pairs and the instructor asked the students to select partners with whom they had not previously worked. Each student put on a protective mask and vest and practiced for about twenty minutes. The instructor circulated around the instructional area and observed each pair, offering individual, corrective feedback. She would often demonstrate and remain with an individual until she was satisfied that the pupil was making progress.

5. Large group activity. After the practice period the instructor would call the class together and discuss common errors and once again review the skill. While the class was gathered around her, the instructor would introduce a large group activity or game. A particular favorite was a game called "Chess" which involved dividing the class into two large groups, each with a designated king or queen. The object was for the two groups to fence against each other in

a free-for-all fashion until the king or queen was vanquished. The instructor often participated, frequently with a team of lower skilled fencers. This activity lasted for ten to fifteen minutes.

6. Open fencing. The class concluded with students pairing off again, and fencing informal bouts. At this point the instructor would announce that the class was over. As many as half the students stayed and fenced an additional ten to fifteen minutes. The instructor stayed and fenced with students who wanted to challenge her.

The following class pattern remained consistent during the formal observation period: attendance, group stretching & warm-up, review/lecture/demonstration, working in pairs with individual feedback given, large group activity/game, and open fencing bouts.

TEACHING PRACTICES

Teaching practices displayed by the instructors were grouped into the following types: planning, lecture/demonstration, curriculum design, and class management.

Planning - These instructors did not approach planning for their classes in the same way. While both thought they had sufficient subject matter knowledge to qualify them to teach their respective classes, the volleyball instructor believed that his knowledge was extensive enough for him to be able to teach "off the top of my head." Apparently he did not understand the concept of planning as a process and did

not associate it with the act of teaching. From his perspective as a student, teachers just taught. Planning was something he had never observed or recognized as part of the teaching process. The instructor did say that he thought in overall terms about what skill he would cover on a particular day, but he did not plan a progression of learning activities. In some cases he would allow his students to dictate the class agenda.

> A student asked me today if we could go over positioning. I was going to do spiking but he didn't seem that interested in it. So we did positioning.

By contrast, the fencing instructor thought some amount of planning was important. She confessed that during dull university classes, she would "sit in the back with my notebook and plan out fencing days." She also believed it was important to plan for her next class on the basis of what had happened before. She clearly viewed learning as a progression and sometimes thought it necessary to adjust what she taught to the pace and ability of individuals in her class.

> Last time I taught them how to in-fight but on Friday we're going to go back and just do some of the basic attacks and try and combine them because now they have the basis for everything but they need to go back to the very beginning and try and do it again.

Lecture/Demonstration - Both instructors used these teaching behaviors as part of their regular class routine. The volleyball instructor called the class together and had students line up against a wall while he faced them and

talked. Both the instructor and the students appeared more resigned than enthusiastic. During the observation period the instructor covered specific skills and strategies. He focused on advanced techniques and concepts that appeared beyond the grasp of most of the students. He never discussed skills in terms of the various motor components that comprised them.

The instructor would either demonstrate something himself, or in the case of strategy concepts, position students on one court during his talk. When he viewed himself lecturing on videotape the volleyball instructor expressed disappointment. He noticed that he bounced a volleyball while he spoke and considered that a distraction. He noticed that no one had asked any questions and wondered if this was a result of poor presentation. He surmised, however, that the students really wanted to play games and not listen to him.

> Teaching is hard with such a big class, you can't hold their attention. The best way to learn is for them to go out and play. I just wish they'd asked more questions.

The lectures tended to be unstructured and sometimes unfocused. On occasion the instructor would remember points he wanted to cover only as he was speaking, or he might randomly discuss aspects of a skill or a concept without apparent consideration of sequence. It thus followed that the students appeared to be uninterested and restless. They

seemed to view the lecture as a necessary and unwelcome formality.

The fencing instructor's lecture and demonstration were third in the daily sequence of formal components in her class, following attendance and stretching. She started by reviewing basic components relating to the skill she was introducing. She then demonstrated a single skill with one partner, speaking and giving cues as she fenced. She was careful to address various mechanical elements of the skill such as balance and center of gravity. She demonstrated the skill in a slow, step-by-step, fashion, followed by a discussion of common errors and problems. The students were visibly engaged, seldom failing to ask questions. The instructor knew exactly what she was going to say and presented the material in a concise and efficient manner. While watching her videotape she mentioned the importance of determining the developmental learning stage of her students.

> It's very important that you know the pace of the class. I can relate to what they're going through as beginners because I'm taking classes now at the beginning level. You have to know what they're ready for; what they know and what they need to work on.

Curriculum Design - Both instructors believed that their class activities have helped facilitate skill acquisition. How they designed and implemented these activities provided insight into how they viewed the learning process.

The volleyball instructor believed that the best way to learn was through watching others exhibit a skill and then

trying to emulate it in a game setting. He viewed the students as mainly responsible for their own learning and believed that his role was to organize games and, when asked, to provide individual feedback. By allowing students to spend the majority of their class time playing in unsupervised games, he thought he was not only affording them the best opportunity to learn, but also accommodating their desires: "They don't like to drill, and shouldn't they be doing what they want to do?" He believed that most of his students were unmotivated and were just taking the class to play games and have a good time. He was responsive to the students' often unspoken objection to feedback.

> Sometimes when I tell them they're doing something wrong they give me a strange look like "why are you telling me this?" Sometimes they just don't want to hear it.

Besides the actual playing of games, this instructor's repertoire included drills for specific skills (bumping, setting, spiking) that tended to be low organization activities to which the volleyball instructor had been exposed as a team player: "I don't think there's any other way except for [spiking] lines for them to work on spiking."

The fencing instructor viewed the learning process for her sport in quite another light. She did not feel the students could learn from "just fencing". She attempted to create a balance of activities to promote a class atmosphere that was conducive to learning. She believed it was important for the students to have fun: "If they don't enjoy

what they're doing they're not going to learn very well." To this end, the fencing instructor designed a variety of activities for each class ranging from strict skill work in pairs to large group Errol Flynn-like fencing games. While not specifically aimed at skill development, these games promoted concepts that she believed were vital.

> They [the games] are a lot of fun and the students learned too. They learned team work which is very important and they learned strategy which is also very important. So even though what we do looks like one big mess, it's not.

The fencing instructor designed her drills in accordance with her view of skill progression. During the first round of pair work she had the students work exclusively on a skill that she had just introduced; she went around to each group, giving individual, directed, help. She did not allow free fencing but believed, on the contrary, that there were fundamental skills, such as footwork, that her students needed to develop before they could advance to more refined techniques.

The fencing instructor credits herself with having developed such pedagogical principles autonomously or by adapting from club and team practices. She is aware that certain activities have to be modified for appropriate skill levels. She believes it is her role to provide enjoyable learning experiences to motivate lower-skilled students.

On the other hand, it also is clear that she does not consider enjoyment, in itself, to be the objective of the

class. She has no reservation about asking students to engage in difficult or stressful drills and exercises, although she takes pains to explain their value and to limit the amount of time they occupy in any one class.

Class Management - In this area the two instructors took distinctly different approaches. The volleyball instructor provided relatively little organizational structure. Typically, his classes began and ended informally. Students came and went on there own initiative. His major administrative responsibility was recording attendance, the major purpose of which was to help determine final grades. It is interesting that the volleyball instructor did identify "learning students' names" as an essential goal. He took pride in the fact that he knew every student's name by the second week of classes.

Transitions between activity components within the lesson also were conducted informally and appeared to occur more as a result of student action than instructor direction. Drills ended and games began when it seemed that students were bored or restless. Games ended when students had to leave. Under such relaxed conditions, maintaining class discipline never was an issue.

In contrast the fencing class had significantly more organizational structure. The instructor had a fixed agenda for each class which she started promptly by taking attendance. If students arrived after this point, it was their responsibility to inform the instructor. Transitions

were clear and, from first to last, instructor-directed. Students were responsible for coming to class with their equipment. The instructor generally had a closing activity and announced when the class was officially over. Students were expected to stay at least until this time. Maintaining discipline, again, was no problem.

SOURCES OF TEACHER KNOWLEDGE

Prior Experiences - Past experiences of the instructors played an important role in shaping their perceptions of the knowledge necessary to teach. Both credit physical education and athletic experiences in high school and college as the primary source for their performance knowledge. The volleyball instructor, however, placed greater emphasis on his athletic experience: "I really didn't learn much in [physical education] class...I learned a lot, a whole lot, from playing on the team." Experiences like these also served as primary sources of knowledge about teaching activities. The volleyball instructor also cites having taken a college volleyball class as a major source of ideas about teaching.

> The guys that taught me volleyball II, I try and take a lot of what they taught me because they taught a really good class, one of the better classes I've taken.

The fencing instructor also borrowed from past experiences to structure her class.

> A lot of the things I do I got when I came here and joined the [fencing] club. Some of the games we do in class are things we do in the club. I also take things from my high school [team] practices and from fencing camps I used to go to every Sunday. Some games are my own ideas.

Role Models - The volleyball instructor believed only two teachers in his educational experience had made a real impact on him. The first, an eighth grade math teacher, made math enjoyable for him. He remembers this teacher as "tough" and as someone who "really knew his subject well." He enjoyed this teacher's class, in part, because he established a special rapport with a mentor who made him feel superior to other students in the class.

> I did so well and everyone else did so poorly, I understood most of it and nobody else did. He was a pretty good teacher.

It is revealing that the volleyball instructor considers someone a good teacher if he himself prospers even though most of the students in the same class may do poorly. This reasoning suggests a somewhat narrow, self-centered view of good teaching. His enjoyment of math class derived largely from his feeling of superiority, a state of mind that was fostered by a teacher who made him feel very special. This experience was closely paralleled by one he had with a physical education teacher while on exchange in Toronto.

> She knew what she was talking about in everything she did. She's one of the few teachers who sticks out in my mind. Gym was the mainstay of my life while I was up there. It was great, I dominated the entire school.

This perceived relationship between an effective teacher and feeling superior to peers, twice experienced by the volleyball instructor as a secondary student, has interesting implications for his perceptions about learning and about teaching as well as for his teaching behaviors. The instructor believed that in order to teach effectively he had to gain respect from his students by demonstrating superior skills.

> They're more willing to learn, and easier to teach, if they respect you. You know it's tough to get respect from them, the only way I know how is like today: go out and heave the ball down their throats so they know that you're better than they are and you have something to teach them.

A completely different attitude was expressed by the fencing instructor who believed that most of the teachers she had during her school years influenced her in positive ways. She felt she had been exposed to enjoyable and meaningful learning experiences dating back to her elementary school days.

> I loved school. Most of my teachers were really very high-spirited, outgoing people and I am too, so we related well.

This instructor recalled a specific science teacher who made a big impression when she was a senior in high school.

> He was incredible, he talked to the students on their own level, he didn't talk down to them. The way he taught the subject, in sort of story form, made the material really easy to remember. He also got involved with the students. He used to go to outings, come to our gym classes and play two on two in the gym.

She goes on to describe a physical education teacher in high school who also left a positive impression.

> He was excellent. He wasn't one of those gym teachers that just goes around blowing his whistle. He put his foot down at the very beginning, and you knew not to cross him, but then he was a real fun guy. He'd explain things and participate himself. Basically I liked him because he took the time and patience to help people, he'd talk to you one on one, he knew your name.

Like the volleyball instructor, this instructor's perception of the relationship between good teachers she remembered and the traits they exhibited may have influenced her teaching behaviors, as well as her knowledge about teaching and learning. To her such teaching traits as an emphasis on good communication, innovative methods of presenting material, knowledge of the subject matter, and individual attention to students, were all described as crucial in forming her positive views. When talking about herself as a teacher, and when discussing fond recollections, she certainly seems to be aware of having been deeply touched by past teachers she was "fortunate enough" to have encountered. An illustration of this can be found in her response when asked how she handled a low skilled, unmotivated student in her fencing 1 class:

> I went over and I helped him and I'd really reinforce the things he did well and I tried to make it fun for him. It must have worked because he's back taking fencing II.

This sensitivity to an individual student's needs related closely to her view that two teaching attributes she

possessed were "patience" and a "desire to help people".

The impression made by former teachers was not always positive. For example, the fencing instructor mentioned she had taken several courses at U/Mass taught by individuals she considered poor instructors.

> He was a bad teacher because he wasn't very clear. He didn't recognize the pace of the class. You have to be able to figure out a class and go with that pace. Don't impose your own pace on it if the students are not able to keep up with it. This teacher was presenting the material at his own pace, which was too fast: he wasn't taking negative feedback from the students and trying to improve.

The fencing teacher was acutely aware of the pace at which she presented material in her own class.

> It's not that hard for me to understand what they (her students) are going through, but still sometimes people remind me to slow down or they say 'I really don't understand this', then I backtrack and we go over simpler things.

One trait the fencing instructor emphasized as critical for good teaching was a sense of humor. She commented that she had been most relaxed and learned best when she had fun in classes. In turn, she concluded that fun was promoted when instructors incorporated humor into their lessons. She believed this was important for the creation of a good learning environment.

> From my experiences with serious versus funny teachers, I learn a lot more if there's a bit of humor in it, it makes it fun, instead of this boring tedious thing.

The ability to make students feel good about themselves is yet another attribute that she associated with distinguished teachers from her past. She saw this as an important goal for herself and all teachers.

> I think the main thing is to make students feel more confident about themselves, and to do that through learning a skill. They don't necessarily have to master fencing, just so long as they feel good about themselves and learn something about the sport.

In summary, all the evidence points toward a distinct difference between two instructors in the way they view the process of teaching and learning as well as the way they structure their classes. This difference reflects perceptions of their own learning experiences drawn from their own relationships with former teachers.

The volleyball instructor professed to be indifferent about his prior educational experiences and gave himself most of the credit for learning. He sees his own volleyball skill as an expression of natural ability, plus practice and close personal observation of outstanding players. He held that a teacher's role in the learning process was no more than that of a person who gives occasional and not always useful tips. As an instructor, this man genuinely felt that there was little he could do with low ability students. He argued that the best way for them to learn was to play and to watch higher-skilled players. He had related best to teachers who created situations in which he, as the highest skilled student, could both excel and dominate. Prior educational

experiences in which he was not the highest skilled student did not make a significant impact on him. It is thus not surprising that when he participated in playing games with his students he chose to play only with the best players.

The fencing instructor, on the other hand, said that she had enjoyed school and credits her former teachers for both her skill acquisition and her motivation to learn. She considers herself lucky to have gone through a "model" school system. She feels most of her teachers were committed, caring people who were sensitive to the needs of all students. These perceptions are reflected in her basic attitude toward learning and teaching and in her teaching behaviors. Her classes were highlighted by individualized attention and feedback to all the students. She displayed sensitivity to student needs. Lower-skilled, unmotivated students were a challenge. She took particular pride when they chose to continue fencing by taking another class. Awareness of learners, skill progressions, organization, management, and content presentation, were all areas of teaching knowledge that she was critically aware of in others and recognized to be important in her own teaching.

Hypothesis 1: The Relationship of Personal Skill to the Ability to Teach.

The volleyball instructor did not believe that his skill ability had a direct influence on his ability to teach that skill. He did, however, think that his performance of a skill might have a bearing on whether students viewed him as an expert and would therefore influence his teaching effectiveness.

> If I can do it the kids in the class respect the fact that I can, say, hit better than everyone in the class. If they respect the fact that I can hit, then maybe they'll listen to what I say because I have demonstrated that I know how to do it. But the fact that I know how to do it...I don't know how that helps my teaching.

The fencing instructor believed it was critical for her to be able to perform a skill in order to be able to teach it. Her view was based, however, on the belief that her ability was linked to her advanced understanding of the sport. Her ability to perform was thus regarded as an expression of her knowledge of sophisticated technique. To her, skill performance represented mastery of the subject matter knowledge required to teach fencing. It was thus not surprising when she commented:

> If you can't perform it yourself you can't expect your students to. You don't have to perform the task extremely well, just so long as you understand it, the different parts, and you can show people that it can be done.

While both instructors thought there were good educational reasons for possessing performance skill in the

sports they were teaching, there were palpable differences in why they believed such ability was important. The volleyball instructor did not make a direct functional link between his skill and his teaching ability. Instead, he associated his superior performance with the respect students would have for him as a teacher. It followed that if they respected him as a player they would listen and learn.

The fencing instructor, on the other hand, believed her performance ability reflected her knowledge and that this knowledge was necessary to good teaching. Unlike the participant in an earlier pilot study, neither instructor thought that ability to teach, exhibited in the form of teaching behaviors, would necessarily improve with increased personal performance skill. Nevertheless they both believed that their skill abilities served important, though quite different, educational purposes.

Hypothesis 2: Absence of Pedagogical Content Knowledge.

One of the decisive components of pedagogical content knowledge is the understanding of subject matter in a way that allows design of appropriate learning activities for students of varying skill levels. The volleyball instructor did possess content knowledge of volleyball. He could perform and analyze skills. When viewing videotapes of students, he was able to identify errors. During simulated planning sessions for beginning and advanced students, however, when the focus was on learning the specific skill of spiking, he could not identify different learning activities that would

be appropriate for the two ability groups.

> You'd just have to do lines or something, hitting lines. It would be the same for beginners and advance players, with everybody using the same approach: running up, jumping, hitting.

His beliefs about how students learned to play were a key to how he thought content should be presented.

> I can see just about everything they're doing wrong. It's only a matter of telling them how to do it right so that they'll understand, so that they'll do it and the only way they'll learn is in a game situation. Which is a lot better than pure drilling. They're never going to like drills.
>
> Practice. That's all it is. Once you've got the form down, it's just practice. That's the only way you can learn.

Given this view of learning, it is not surprising that the volleyball instructor did not think a teacher had many responsibilities.

> The role of a teacher is just to watch and maybe model the perfect set, but mainly just to watch. I really couldn't tell you how to change a person, I haven't had experience doing that; I'm still learning myself.

By the same token, the fencing instructor recognized the need to present her content knowledge differently to students who were at different ability levels.

> I do different things with fencing 1 than I do with fencing II. You've got to if only because the skill levels are so different. I don't even let the beginners have a foil for two weeks. We practice foot work and balance.

The fencing instructor was conscious of her students' uneven abilities and recognized the need to create different learning activities. Asked to talk through simulated sessions on footwork for both beginning and advanced fencers she commented:

> With beginners I change activities a lot. We do footwork relays. We do a game called cat and mouse. It's a distance game. One person leads and the other person follows. I try to make it challenging and fun to do.
>
> With advanced students I give a lot of specific feedback on foot work while they're free-fencing. Also I kind of turn them into teaching assistants if they understand the skill. I feel that when they're teaching they're also learning the skill.

While pedagogical content knowledge goes beyond merely recognizing skill differences and creating a variety of appropriate learning activities (it includes, for example, the recognition of common learning errors associated with specific skills) it is obvious that the fencing instructor has a substantial base of pedagogical content knowledge, and that her awareness seems to allow for additions to that fund. On the other hand, the volleyball instructor's knowledge growth has not developed to the point where he can structure activities to accommodate varied skill levels.

Hypothesis 3: Non-Formally Trained Physical Education Teachers Do Not Engage In Reflection.

The term "reflection" seems to have escaped clear and consistent definition when used in the context of education. For the purpose of this pilot study reflection was intended

to simply mean the act of looking back on prior teaching episodes for the purpose of improving the quantity and quality of learning for future classes. When discussing the act of reflection during the formal interviews both instructors talked in terms of modifying activities and to some degree altering the unit plan to better suit student needs. Neither instructor talked explicitly about using reflection to modify or change their teaching behaviors.

As with planning, the volleyball instructor did not recognize reflection as a part of the teaching process. He did admit to noticing when students responded well to a particular drill and would tend to repeat that drill in his next class, but by and large, he did not reflect on his past teaching: "I can't remember that far back." Yet the very process of participating in this pilot study was a form of reflection, a fact that did not escape his notice.

> When I read the transcript of my last interview, I realized that I was contradicting myself in the next interview in a lot of places; about fun, about what makes a good teacher. In a lot of places I was doing things totally the opposite of what I said I should be doing. I think all teachers should have this kind of experience.

The fencing instructor actively engaged in the process of reflection. An example is her comparison of her current class with that of a former one she had taught.

> The fencing class I had last semester had a little more skill (Then again, I don't know if you'd call it skill or ability to learn fencing), than the class this semester, which is very slow. So I have to adjust. I can't teach the way I did last semester, I have to slow everything down, like today I'm going to have a review session and I'm just going to go over everything.

The fencing instructor would also track student progress on a class by class basis and adjust her lessons accordingly. When things weren't going well she would change activities.

> If I see that it's not working right in that class then I switch it right there and don't even attempt to go on with it. I adjust as I go.

As with other areas of teaching reflection was engaged in quite differently by the two instructors. By not recognizing active reflection as an important component in his development and growth as a teacher, the volleyball instructor simply repeats and imitates teaching behaviors with little thought given to whether they contribute to student learning. The fencing instructor, on the other hand, uses reflection to critically analyze the effectiveness of her class. She has no reservations about adjusting, changing, or modifying her class activities or her presentation of material.

Discussion

It is evident that a sharp difference exists between the the experiences of the two instructors and how they analyzed these experiences as a source of teacher knowledge. The fencing instructor, much more than her male counterpart, processed the information she gained in her apprenticeship in ways more conducive to the comprehension of the teaching process. The tantalizing question is why? A possible answer may be located in a link between the perceived quality and impact of prior educational experiences and the ability to learn from them. The fencing instructor addresses this point:

> If someone had the same skill as I do but they had teachers who weren't all that wonderful I'm sure they would have a very different attitude toward teaching.

One part of the answer may be sought in their perceptions of themselves as teachers. The setting for this research was unique in that the instructors studied were simultaneously full-time students at the institution in which they were teaching. For the volleyball instructor, this dual role created a conflict in his perceptions of learning and teaching. Even in his position as the instructor of a University physical education class, he viewed teaching from a student's perspective. When asked directly what he considered himself to be in the context of the university, he replied: "A student." This angle of vision is illustrated in one particularly telling remark:

> Why would they [his students] listen to me? I'm just another student like them. Maybe if I were older and getting paid to teach, they would respect me more.

This student perspective also influenced the volleyball instructor's perception of learning. Understanding how students learn is critical to the development and growth of a teacher. The volleyball instructor sincerely believed that he had taught himself volleyball, and that the major factors involved in his learning were his own natural ability and his willingness to practice. He comments: "I had the coordination to teach myself. Pure experience is how I learned." He believed his own students could learn volleyball skills the same way.

> They could learn by themselves if they just went out and played with other people who were better at the game. They'd learn just by watching.

It follows that he would regard the teacher's role as unimportant and all but unnecessary. Given this view it hardly seems likely that he would critically analyze teaching based on past experience.

The fencing instructor appeared to experience no sharp disjunction between her dual roles. When asked directly whether she considered herself a student or a teacher she replied, "both". She expressed no anxiety about teaching peers and felt she could easily create a teacher/student relationship by establishing her leadership role.

> It starts with my taking attendance. That tells them right off that I'm teaching. Then I lead the stretching and warm-ups. That sets the tone.

She attributes her own learning to the role that her teachers played. She did not believe that people could learn to fence without instruction: "People were not born to fence." She feels she learned because teachers provided instant and expert feedback.

> I've had a lot of feedback since I've started fencing. If I had all the desire in the world but didn't get any feedback, I wouldn't know how I was doing; I'd get frustrated and give up.

It is clear that the fencing instructor possesses a more complex perspective on the learning process. As a teacher she takes more responsibility for learning than the student oriented volleyball instructor. Unlike the volleyball instructor who regards teaching as a simple process comprised mainly of mechanical tasks, the fencing instructor regards teaching as both problematic and challenging. It is only to be expected that she also characterized her role as "no different" from that of a university professor.

Another important difference between the two instructors is revealed in how they judged the relative importance of the subject matter they were teaching compared to other areas of university study. The volleyball instructor did not think that physical education was a serious area of study.

> I don't think it's as important to get volleyball across to students as it is to get a serious matter like apartheid across to them.

> I don't think it [volleyball] is that important a skill. It's something that you could just go out and learn on your own. To learn other subjects you have to take notes and be tested.

In contrast, the fencing instructor echoed the ancient Greek ideal of a sound body and a sound mind:

> An academic teacher makes your mind grow and a physical education teacher makes your body, as well as your mind, grow.
>
> The only difference between physical education teachers and other teachers is the subject matter they teach. I think physical education teachers are just as much teachers as anyone else.

It follows that the instructors' estimation of the importance of the subject matter they were teaching would have an influence on how each approaches the process of teaching and learning to teach. The volleyball instructor's low opinion of the importance of his subject appears to carry over to similar views about the teaching and learning process. The more positive views about the importance of physical education expressed by the fencing instructor reflect her respect for the subject matter and its place in the curriculum.

The case of the fencing instructor raises some interesting questions. What was it about her that allowed this teacher to engage in active reflection? How did she develop a knowledge of teaching that went far beyond that of the volleyball instructor's? From what experiences did she develop an awareness of learners and come to understand her subject

matter for teaching, not merely for performance and demonstration? Respect for the subject and relative comfort with the dual student/teacher role alone do not seem to account for this substantial achievement. From interview and background questionnaire responses one can discern three points which shed some light on these questions.

(1) Overcoming gender stereotypes. When asked about the impact of former teachers the fencing instructor generally recalled positive experiences. In one instance, however, she recalled a middle school physical education teacher who left her with a lasting negative impression.

> I remember playing football once and I threw a spiral and the person caught it and got a touchdown. [The teacher] came over to me and said "nice throw for a girl." And from then on I thought to myself I don't ever want to end up like that.

This incident, combined with the fact that fencing is generally considered a masculine sport, in all likelihood created a sense of heightened purpose in her desire to develop teaching skills. To her, teaching well helped dispel the myth that women could not possibly teach something stereotypically associated with men. Although this was never discussed as an issue, it must have been gratifying to have gained the respect of her fencing II class, a group composed of 19 males and 1 female.

(2) A global view of teaching. The fencing instructor is an exercise science major and plans to work in the field of physical rehabilitation. When asked whether she would miss

teaching in a school environment she replied:

> No. Because with my major, physical rehabilitation, I'd be teaching people how to do things, teach them how to walk. It takes the same patience and desire to help people.

This global view removes teaching from the narrow context of a particular institution with prescribed behavioral patterns, such as a school. The fencing instructor considered herself a "teacher" in a variety of interactive situations which included individual academic tutoring to peers and music lessons given to youngsters. This frame of reference may have helped her gain additional insight into teaching; it did provide the opportunity to learn about teaching from a wider variety of experiences.

(3) Influence of multiple roles. In her ethnographic study J. Shulman (1987) underscores the importance to an older student-teacher of having been a mother, wife, counselor, and teacher's aide. This person's ability to gain a greater degree of educative perspective derived from her multiple role experiences was a point which distinguished her from her younger peers. The influence of other roles may have been a contributing factor to the fencing instructor's ability to secure knowledge about teaching. In her roles of older sister, camp counselor, substitute and private teacher, the fencing instructor had been involved in situations that gave her the opportunity to develop sensitivity to the needs of others and to critically evaluate her actions in various interpersonal contexts.

Examining the volleyball instructor in regard to these three points brings out some interesting contrasts. As a member of the dominant gender his participation history in sports reflects no deviation in accepted societal norms. In high school he was a varsity basketball and tennis player. As a male participating in sports he had far fewer stereotypes to overcome. In addition, the volleyball instructor clearly did not possess a global view of teaching. He drew no parallels between teaching and anything else in his life. Teaching to him occurred strictly within the context of educational institutions. His career ambition was to be a lawyer and he saw nothing remotely similar in what lawyers and teachers do.

Finally, although the volleyball instructor was the brother of one sibling, overall he had taken on relatively few teacher-like roles in his life. Summer jobs included work in restaurants and serving as a referee in youth sports leagues. The volleyball instructor's experiences and perspectives in these three areas may explain why he had a limited understanding of teaching.

Implications

The results of this study have several implications for teacher education programs. Prior educational experiences did play a role in how the two instructors learned to teach. It probably is safe to assume that teacher training candidates experience a similar self-educating process prior to the beginning of their formal preservice training. Left unchecked these views about teaching may well remain dormant only to re-emerge after the pre-service training period.

Many have called for those who develop teacher training programs to recognize the varied views of teaching that typify inductees upon entry into a program (Lortie, 1975; Clark, 1984; Haberman 1985). This would be an important first step, but there is now reason to believe that teacher educators should go beyond recognition to design and implement a program component dealing directly with teaching behaviors associated with beliefs formed prior to entry. Accordingly, inaccurate perceptions and behaviors must be evaluated, clarified, and when necessary, directly confronted. It is not enough to assume that preservice teachers will discard dysfunctional views formed from many years of being a student merely because they are exposed, for a relatively short period, to educationally advantageous principles and practices.

The two participants in this study provide us with a glimpse of the future. Given the recent movement in teacher education away from pedagogical training and toward a more

general liberal arts curriculum and more unassisted learning through classroom experience, the educational profile of these instructors may well resemble trained teachers in the not-so-distant future.

As the two instructors in this study show, the highly unpredictable nature of experiential learning can yield, at best, mixed results. There is no indication that the volleyball instructor will ever learn to teach as a result of "on the job training" only. This is not to deny that much knowledge can be gained from the experience of teaching. When such knowledge remains unsupplemented, however, by a strong program that integrates such concepts as curriculum design, skill analysis, management, and assessment, the lessons of experience are likely to be rendered worse than useless, that is to say, do-it-yourself pedagogy is potentially counter-productive and an obstruction to effective teaching.

While the case of the fencing instructor may at first appear to contradict this notion, her superior ability to learn from her experience only highlights the need for a program that would reinforce, refine, and improve her already existing skills. A program in which teacher education specialists survey and assess knowledge differences upon entry, using that knowledge to design individualized coursework, could make a good teacher great.

Appendix A

Background Questionnaire

1. Age: _____Years

2. Sex: _____Male _____Female

3. What is your present educational level?
   1. Freshman 2. Sophomore 3. Junior 4. Senior 5. Graduate

4. What is your major?

5. Please list the General Physical Education courses you have taken at U/Mass:

   Please list other college level courses you think relate to your being a G.P.E. activity instructor:

6. Please reflect back to your high school years (9-12). How many years of physical education did you participate in and what were some of the activities?

   Did you ever play on a high school athletic team?
   1. Yes 2. No
   If yes, please list the sports:

7. Have you ever played on a college athletic team?
   1. Yes 2. No.
   If Yes, please list the sports:

8. Have you ever participated in intramural sports, clubs,leagues, or youth sports programs, while in or out of school?

   Do you practice a physical activity, not associated with any program, on a regular basis? If so, what is the activity and how often do you do it?

9. Have you ever taught a physical education class before this one? If so, please list the activity and age level taught:

   Have you ever been involved with coaching a team while in or out of school? If so, please list the sport and age level of the participants

10. Have you ever had any specific, formal instruction on <u>how</u> to teach or coach sports, games, or activities? (clinics, certification classes etc.).
    1. Yes 2. No
    If yes, please describe each instance:

Appendix B

Interview Guide

Q: Since you started school as a child has any teacher in any subject area made a big impact on you? Please describe as specifically as you can what this teacher did that made an impression on you?

Lets talk a little about your past experiences with physical education and sports.

Q: What is your earliest memory of physical education in school? What do you remember about the teacher?

Q: What sorts of things did he/she do that made your physical education classes positive or negative experiences?

Think back to all the experiences you've had with physical education that you can remember. Describe ones that stick out in your mind.

Q: What do you remember about the teachers? What things did they do as they taught your class? What else do you recall about your teachers?

Describe the coaches you had and particular things that you remember that made playing on a team a good or bad experience.

Q: Have you ever taught before? -Classroom -individuals - physical activities?

Q: What do you think it takes to be an effective teacher? -of physical education?

Q: Have you ever coached before? How are coaching and teaching related?

Q: How did you come to teach this class?

Q: What are your objectives for your students? What do you hope they'll take away with them?

Q: In terms of how you teach, what things (people, events, situations) from your past experiences do you think have had the greatest impact?

References

Clarke, C. D., Smith, R.B., Newby, T. J. & Cook, V.A. (1984). Origins of teaching behavior. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

Haberman, M. (1985). Can common sense effectively guide the behavior of beginning teachers? Journal of Teacher Education. 36(6), 32-35.

Holmes Group Executive Board. (1986). Tomorrow's Teachers: A Report of the Holmes Group. East Lansing, MI: Holmes Group.

Joint Task Force on Teacher Preparation. (1987). Making Teaching a Major Profession: Recommendations of the Joint Task Force on Teacher Preparation. Boston, MA: Board of Regents of Higher Education/Department of Education. Commonwealth of Massachusetts.

Lortie, D. C. (1975). Schoolteacher, A Sociological Study. Chicago, IL: University of Chicago Press.

Rosenberg, D. Z. (1988). An investigation of the influences affecting the teaching behavior of a college physical education activity instructor who has not received formal teacher training. Unpublished manuscript.

Shulman, J. (1987). From verteran parent to novice teacher: A case study of a student teacher. Teaching & Teacher Education. (3)1, 13-27.

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. Educational Researcher. 15(2), 4-14.

Task Force on Teaching as a Profession. (1986). A Nation Prepared: Teachers for the 21st Century. New York: Carnegie Forum on Education and the Economy.